

WHAT IS CLAIMED IS:

1. A light weight hollow thermoplastic board, which comprises:

a first planar sheet;

a second planar sheet; and,

a plurality of ribs;

wherein said first planar sheet and said second planar sheet are spaced apart by and are interconnected by said ribs, said ribs being longitudinally extended and having shifted patterns.

2. The light weight hollow thermoplastic board of claim 1

wherein said ribs have shifted patterns in the form of sigmoid patterns.

3. The light weight hollow thermoplastic board of claim 1

wherein said board is constructed in an integral form.

4. The light weight hollow thermoplastic board of claim 1 wherein said ribs are positioned at right angles to said first planar sheet and said second planar sheet and create rectangular cross-sectioned passageways therebetween.

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5. The light weight hollow thermoplastic board of claim 1 wherein said ribs are positioned at angles other than right angles to said first planar sheet and said second planar sheet and create trapezoidal cross-sectioned passageways therebetween.

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6. The light weight hollow thermoplastic board of claim 1 wherein said ribs are arcuated and create elliptical cross-sectioned passageways there between.

7. The light weight hollow thermoplastic board of claim 1 wherein said ribs are arcuated and create a circular cross-sectional passageways therebetween.

5 8. The light weight hollow thermoplastic board of claim 1 wherein said ribs are u-shaped.

9. The light weight hollow thermoplastic board of claim 1 wherein said ~~boards~~ is made of a thermoplastic polymer selected from the group consisting of olefins, styrenes, vinyl chlorides, acrylics, polycarbonates and ethylene terephthalates.

10. The light weight hollow thermoplastic board of claim 9 wherein said thermoplastic polymer is selected from the group consisting of polypropylenes, linear polyethylene, branched polyethylene and copolymers thereof.

11 A process for producing a light weight hollow thermoplastic board having a first planar sheet and a second planar sheet which are spaced apart by and interconnected by longitudinally extended ribs having shifted patterns, which comprises:

5 extruding molten thermoplastic through an extruder having a die assembly with a die with a cavity having a cross-section corresponding to a desired external shape of a thermoplastic board and having mandrels within said cavity to create a soft board having a plurality of longitudinal passageways and ribs between a first planar sheet and a second planar sheet;  
10 sheet;

advancing the resulting soft board to a sizer and cooler assembly to set the first dimensions of the soft board and cool it to a rigid board;

during said extruding and said advancing, oscillating one of said die assembly and said sizer and cooling assembly relative to one another  
15 in a predetermined sequence to cause said ribs to shift from a straight line path to establish a board with ribs of shifting patterns.

12. The process of claim 11 wherein said die assembly is stationary  
and said sizer and cooling assembly is oscillated.

13. The process of claim 12 wherein said sizer and cooling assembly  
is oscillated mechanically.

14. The process of claim 12 wherein said sizer and cooling assembly  
is oscillated by computer control.

15. The process of claim 11 wherein said die assembly is oscillated  
and said sizer and cooling assembly is stationary.

16. The process of claim 15 wherein said die assembly is oscillated  
mechanically.

17. The process of claim 15 wherein said die assembly is oscillated

by computer control.

18. The process of claim 11 wherein said process further includes:  
  
annealing said rigid board in an oven.

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19. The process of claim 11 wherein said board is made of  
  
thermoplastic polymer selected from the groups consisting of olefins,  
  
styrenes, vinyl chlorides, acrylics, carbonates and ethylene terephthalates.

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20. The process of claim 19 wherein said thermoplastic polymer is  
  
selected from the group consisting of polypropylenes, linear  
  
polyethylene, branched polyethylene and copolymers thereof.



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